



ROCKY FLATS

ADMIN RECORD

U.S. DEPARTMENT OF ENERGY  
ROCKY FLATS ENVIRONMENTAL  
RESTORATION MANAGEMENT

**DOE-RFFO  
ENVIRONMENTAL  
RESTORATION  
PROGRAM**

**Monthly Report for  
May 1995**



**June 20, 1995**

DOCUMENT CLASSIFICATION  
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## Table of Contents

### Executive Summary

Significant Activities and Achievements for May 1995 .....	1
Interagency Agreement (IAG) Performance Indicators for Monthly Report .....	3
Problems and Programmatic Issues .....	5
Near-Term IAG Table Six Milestones .....	7
 1.0 Introduction .....	 9
2.0 Project Status .....	11
2.1 OU 1 - 881 Hillside Area .....	11
2.1.1 OU 1 Assessment .....	11
2.1.2 OU 1 Remediation .....	13
2.2 OU 2 - 903 Pad, Mound, and East Trenches .....	17
2.2.1 OU 2 Assessment .....	17
2.2.2 OU 2 Remediation .....	21
2.3 OU 3 - Offsite Areas .....	25
2.4 OU 4 - Solar Evaporation Ponds .....	29
2.4.1 OU 4 Assessment .....	30
2.4.2 OU 4 Remediation .....	31
2.5 OU 5 - Woman Creek .....	37
2.6 OU 6 - Walnut Creek .....	41
2.7 OU 7 - Present Landfill .....	45
2.1A Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) .....	49
2.8 OU 8 - 700 Area .....	51
2.9 OU 9 - Original Process Waste Lines .....	55
2.10 OU 10 - Other Outside Closures .....	59
2.11 OU 11 - West Spray Field .....	63
2.12 OU 12 - 400/800 Area .....	65
2.13 OU 13 - 100 Area .....	67
2.14 OU 14 - Radioactive Sites .....	69
2.15 OU 15 - Inside Building Closures .....	71
2.16 Sitewide Activities .....	73
 3.0 Routine Environmental Monitoring .....	 76
3.1 Surface and Sediments .....	76
3.2 Soils .....	76
3.3 Groundwater .....	76
 4.0 Subcontractor Identification .....	 78
 Appendix - Acronyms .....	 82

## EXECUTIVE SUMMARY

### SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR MAY 1995

On May 25, 1995, the Operable Unit (OU) 1 Final Proposed Plan with the No Action Alternative was submitted to the regulatory agencies.

On May 24, 1995, the OU 2 Draft Phase II RFI/RI Report was delivered to the regulatory agencies ahead of schedule.

On May 22, 1995, 72 drums of OU 2 Field Treatability Unit sludge was shipped for offsite disposal. The remaining 250 drums are required to be shipped to the waste disposal subcontractor by July 30, 1995.

On May 24-25, 1995, ten OU 6 roll-off containers of filter bags were placed in the landfill. This accelerated action is complete.

On May 12, 1995, the OU 11 Draft Proposed Plan was delivered to the regulatory agencies. The original Interagency Agreement (IAG) milestone date for this submittal was October 9, 1998.

On May 17, 1995, the OU 15 Proposed Plan/Draft Resource Conservation and Recovery Act (RCRA) Permit Modification was submitted and the public comment period began.

# IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones To Date</u>	<u>Current Fiscal Year (FY) 95</u> <u>(10/1/94 - 9/30/95)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	16	143
Met	12	109
Extensions Granted	14	63
Extensions Denied	0	8
Remaining this FY 95 (to 9/30/95)	22	n/a
Added	1 <sup>*</sup>	11
Deleted	1	5

<u>Deliverables in Review</u> <u>by Regulators</u>	<u>Project</u>	<u>Date Submitted/</u> <u>Completed</u>	<u>Date review was completed</u> <u>EPA</u> <u>CDPHE</u>
	OU 1 Final Corrective Measures Study/Feasibility Study (CMS/FS) Report	13 Feb 95	11 Apr 95
	OU 1 Revised Draft Proposed Plan	13 Feb 95	

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	2,852,548 gallons
OU 2 Surface Water IM/IRA Treatment	24,821,025 gallons
OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)	5,911,788 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved</u> <u>Planned Date</u>	<u>Current Projected</u> <u>Completion Date</u>	<u>Comments</u>
OU 1 Draft Responsiveness Summary	19 Sep 95	19 Sep 95	On schedule
OU 2 Corrective Design/Remedial Design Work Plan	15 Jun 95	03 Mar 98	Extension requested
OU 2 Final Phase II RFI/RI Report	21 Sep 95	21 Sep 95	On schedule
OU 3 Draft Phase I RFI/RI Report	30 Oct 95	15 Sep 95	Ahead of schedule
OU 4 IM/IRA Draft Responsiveness Summary	09 Jun 95	09 Jun 95	On schedule
OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	To be determined	See footnote <sup>1</sup>
OU 5 Draft Phase I RFI/RI Report	01 Nov 95	01 Nov 95	On schedule
OU 6 Draft Phase I RFI/RI Report	02 Oct 95	02 Oct 95	On schedule
OU 7 Revised Proposed Action Memoranda	15 Jun 95	15 Jun 95	New milestone
OU 7 Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	31 Aug 95	On schedule
OU 7 Begin Seep Collection	16 Aug 95	16 Aug 95	New milestone
OU 9 Final Phase II RFI/RI Work Plan	03 Mar 95	To be determined	See footnote *
OU 9 Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	To be determined	See footnote *

\* This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Department of Energy (DOE) Stop Work Order directive until agreement can be reached with the regulatory agencies on the IA OU reconfiguration.

<sup>1</sup> This milestone will be missed because of reevaluation of the project's technical scope and funding restraints. A forecast date is not known.

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 10 Draft Phase II RFI/RI Work Plan	27 Jun 95	To be determined	See footnote <sup>1</sup>
OU 10 Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	To be determined	See footnote <sup>1</sup>
OU 10 Final Phase II RFI/RI Work Plan	21 Nov 95	To be determined	See footnote <sup>1</sup>
OU 11 Final Combined Phases RFI/RI Report	19 Sep 95	21 Jul 95	Ahead of schedule
OU 11 Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95	10 Oct 95	Proposed elimination
OU 15 Final Corrective Action Decision/Record of Decision	30 Sep 95	30 Sep 95	New milestone

<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	To be determined	See footnote <sup>1</sup>
OU 8 Final Phase I RFI/RI Report	12 Jul 94	To be determined	See footnote <sup>1</sup>
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	To be determined	See footnote <sup>1</sup>
OU 9 Final Phase I RFI/RI Report	06 Sep 94	To be determined	See footnote <sup>1</sup>
OU 9 Draft Phase II RFI/RI Work Plan	10 Mar 95	To be determined	See footnote <sup>1</sup>
OU 9 Draft Phase I Proposed IM/IRA Decision Document	01 May 95	To be determined	See footnote <sup>1</sup>
OU 10 Draft Phase I Proposed IM/IRA Decision Document	26 May 95	To be determined	See footnote <sup>1</sup>
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	To be determined	See footnote <sup>1</sup>
OU 10 Final Phase I RFI/RI Report	30 Jan 95	To be determined	See footnote <sup>1</sup>
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	To be determined	See footnote <sup>1</sup>
OU 12 Final Phase I RFI/RI Report	15 Sep 94	To be determined	See footnote <sup>1</sup>
OU 13 Draft Phase I RFI/RI Report	08 Aug 94	To be determined	See footnote <sup>1</sup>
OU 13 Final Phase I RFI/RI Report	11 Jan 95	To be determined	See footnote <sup>1</sup>
OU 14 Draft Phase I RFI/RI Report	20 Dec 94	To be determined	See footnote <sup>1</sup>
OU 14 Final Phase I RFI/RI Report	23 May 95	To be determined	See footnote <sup>1</sup>

<u>Extended Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Draft Title II Design	30 Nov 96	30 Nov 96	See footnote <sup>2</sup>
OU 1 Final Title II Design	28 Feb 97	28 Feb 97	See footnote <sup>2</sup>
OU 1 Begin Corrective Action/Remedial Action Construction	03 Oct 97	03 Oct 97	See footnote <sup>2</sup>
OU 1 Complete Corrective Action/Remedial Action Construction	02 Apr 99	02 Apr 00	See footnote <sup>2</sup>
OU 1 Submit Performance Assessment Report	09 Jul 99	09 Jul 99	See footnote <sup>2</sup>

<sup>1</sup> This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Department of Energy (DOE) Stop Work Order directive until agreement can be reached with the regulatory agencies on the IA OU reconfiguration.

<sup>2</sup> New milestone dates were accepted by the regulatory agencies by means of a March 31, 1995, letter from the Rocky Flats Environmental Technology Site that stated all out-year IAG Table 6 milestones would be updated to maintain the original sequence and timeframe shown in the IAG Table 6.

## PROBLEMS AND PROGRAMMATIC ISSUES

The Stop Work Order issued in March 1995 for the Industrial Area (IA) OUs will delay intrusive field activities planned for the fourth quarter of the Fiscal Year (FY) 95 and all subsequent activities.

# NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
4	Submit Draft IM/IRA Responsiveness Summary	09 Jun 95	On schedule
2	Submit Corrective Design/Remedial Design Work Plan	15 Jun 95	Extension requested
7	Submit Revised Proposed Action Memoranda	15 Jun 95	On schedule
10	Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	See footnote 1
9	Submit Final Phase II RFI/RI Work Plan	07 Aug 95	See footnote 1
7	Begin Seep Collection	16 Aug 95	On schedule
4	Submit Phase I Final IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	See footnote 2
7	Submit Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	On schedule
1	Submit Draft Responsiveness Summary	19 Sep 95	On schedule
11	Submit Final Phases (combined) RFI/RI Report	19 Sep 95	Ahead schedule
2	Submit Final Phase II RFI/RI Report	21 Sep 95	On schedule
9	Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	See footnote 1
15	Submit Final Corrective Action Decision/Record of Decision	30 Sep 95	On schedule
6	Submit Draft Phase I RFI/RI Report	02 Oct 95	On schedule
11	Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95	Proposed elimination
10	Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	See footnote 1
3	Submit Draft Phase I RFI/RI Report	30 Oct 95	Ahead of schedule
5	Submit Draft Phase I RFI/RI Report	01 Nov 95	On schedule
10	Submit Final Phase II RFI/RI Work Plan	21 Nov 95	See footnote 1
4	Submit Final IM Title II Design	18 Dec 95	See footnote 2
1	Submit Final Responsiveness Summary	22 Dec 95	On schedule
1	Submit Draft Corrective Action Decision/Record of Decision	22 Dec 95	On schedule
7	Submit Draft Final Phase I IM/IRA Decision Document	05 Jan 96	On schedule
9	Submit IM/IRA Responsiveness Summary	08 Feb 96	See footnote 1
2	Submit Draft Title II Design	15 Feb 96	On schedule

1 This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Department of Energy (DOE) Stop Work Order directive until agreement can be reached with the regulatory agencies on the IA OU reconfiguration.

2 This milestone will be missed because of reevaluation of the project's technical scope and funding restraints. A forecast date is not known.

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
6	Submit Final Phase I RFI/RI Report	21 Feb 96	On schedule
10	Submit IM/IRA Responsiveness Summary	06 Mar 96	See footnote <sup>1</sup>
11	Submit Final Phase I Proposed IM/IRA Decision Document	14 Mar 96	Proposed elimination
1	Submit Final Corrective Action Decision/ Record of Decision	29 Mar 96	On schedule
1	Submit Corrective Design/Remedial Design Work Plan	29 Mar 96	On schedule
7	Submit IM/IRA Responsiveness Summary	01 Apr 96	On schedule
5	Submit Final Phase I RFI/RI Report	02 Apr 96	On schedule
4	Submit Draft Phase II RFI/RI Report	16 Apr 96	See footnote <sup>2</sup>
9	Submit Final Phase I IM/IRA Decision Document	07 May 96	See footnote <sup>1</sup>
7	Submit Draft IM Title II Design	30 May 96	On schedule

<sup>1</sup> This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Department of Energy (DOE) Stop Work Order directive until agreement can be reached with the regulatory agencies on the IA OU reconfiguration.

<sup>2</sup> This milestone will be missed because of reevaluation of the project's technical scope and funding restraints. A forecast date is not known.



## SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for May 1995. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess and remediate, where necessary, contaminated areas at or adjacent to the DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU), as well as other program activities, are presented in Section 2. As required by Paragraph 210 of the IAG, Section 3 contains the schedules for routine environmental sampling. As required by Paragraph 13 of the IAG, Section 4 contains a list that identifies the subcontractors performing work on the program.

## SECTION 2. PROJECT STATUS

### 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up Operable Unit (OU) 1 were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Measure (IM)/Interim Remedial Action (IRA) at OU 1 involved the construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater that flows from the OU 1 area. The near-surface water is treated at the 891 treatment facility, which was designed for this purpose, and is released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. The IRA construction was completed in April 1992. A Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Corrective Measures Study/Feasibility Study (CMS/FS) was developed and submitted in February 1995. A Draft Proposed Plan recommending use of the French drain and institutional controls was also submitted in February 1995.

#### 2.1.1 OU 1 ASSESSMENT

##### **Scope of Work**

##### **Changes This Period**

The preferred alternative presented in the Proposed Plan changed to No Action.

##### **Technical Approach**

##### **Changes This Period**

The preferred alternative presented in the Proposed Plan changed to No Action.

##### **Interagency Agreement**

##### **(IAG) Milestone**

##### **Accomplishments**

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92
Submit Final Phase III RFI/RI Report	15 Nov 93
Submit Revised Phase III RFI/RI Report	15 Jun 94
Submit Draft Corrective Measures Study (CMS)/FS	25 Aug 94
Submit Draft Remedial Action Plan/Proposed Plan	13 Feb 95
Submit Final CMS/FS	13 Feb 95
Submit Final Proposed Plan	25 May 95

##### **Future IAG Milestones**

##### **Through Fiscal Year (FY) 96**

<u>Milestone Name</u>	<u>Planned</u> <u>Date</u>	<u>Approved</u> <u>Extension</u> <u>Status</u>	<u>Forecast</u> <u>Date</u>
Submit Draft Responsiveness Summary	06 May 94	19 Sep 95	19 Sep 95
Submit Final Responsiveness Summary	03 Aug 94	22 Dec 95	22 Dec 95
Submit Draft Corrective Action Decision/ Record of Decision	03 Aug 94	22 Dec 95	22 Sep 95*

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Corrective Action Decision/ Record of Decision	01 Nov 94	29 Mar 96	22 Dec 95*
Submit Draft Title II Design	05 Jul 95		30 Nov 96*
Submit Final Title II Design	03 Oct 95	03 Oct 95	21 Nov 96*
Submit Final Corrective Action Decision/ Record of Decision	01 Nov 94	29 Mar 96	29 Mar 96*
Submit Corrective Design/Remedial Design Work Plan	01 Nov 94	29 Mar 96	29 Mar 96*
Begin Corrective/Remedial Action Construction	07 May 96	07 May 96	26 Jun 97*

- A Baseline Change Proposal to change the baseline is in progress.

#### May Work Activity Status

On May 26, 1995, the Department of Energy (DOE) received the technical position paper to evaluate the pump and treat technologies. This technical investigation analyzed the suitability of a pump and treat system for water contaminated with Dense Non-Aqueous Phase Liquids at the Operable Unit (OU) 1 collection well.

Numerous meetings among the regulatory agencies, DOE, and the Rocky Flats Environmental Technology Site Personnel were conducted to decide a preferred alternative for the Proposed Plan. During these meetings, revisions to the OU 1 Proposed Plan were agreed to, and it became apparent that a one week extension would be necessary to make the revisions to the document. On May 17, 1995, the EPA issued an extension letter for submittal of the Final Proposed Plan. The final Proposed Plan with the No Action Alternative was submitted to the regulatory agencies on May 25, 1995.

After discussions of the alternatives presented in the Final Corrective Measures Study/Feasibility Study (CMS/FS), DOE determined that alternative # 0, No Action, was the preferred course of action. Preliminary indications from the regulatory agencies are that the No Action position may be unacceptable.

#### Technical Memoranda (TM)

##### Project

OU 1 - 881 Hillside

TM #10

TM Title

Preliminary Remediation Goals

TM Status

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date comments were received: EPA 01 June 94, CDPHE 26 Jul 94

TM #11  
TM Title  
TM Status

Alternative Array  
When preparation was concluded: 03 May 94  
Projected date of submittal to EPA/CDPHE: Submitted  
Actual date of submittal: 03 May 94  
Date when comments were received: EPA 24 May 94, CDPHE  
06 Jun 94

**Planned Work for June**

- A comprehensive review of the OU 1 Administrative Record is being conducted. This review is in preparation of the public review period and the public hearing associated with the Remedial Action Plan.
- The public comment period on the Proposed Plan will begin.
- A newspaper advertisement for the public hearing of the Proposed Plan will be placed.
- The public reading rooms will be provided with a copy of the regulatory agency approved Proposed Plan.
- Comments on the CMS/FS Report will be finalized.

**Problems**

None

**Open Items**

The review and approval of the final Proposed Plan is due back from the regulatory agencies on June 1, 1995.

**2.1.2 OU 1 REMEDIATION**

**Scope of Work**

**Changes This Period**

None

**Technical Approach**

**Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Proposed Interim Measure (IM)/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91

Complete IM/IRA Construction (891 Treatment Building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones  
Through FY 96**

None

**May Work Activity Status**

**Interim Measure/Interim Remedial Action (IM/IRA)  
Treatment Facility - - Normal water treatment continues.**

A letter was received from the EPA that indicates that treatment of groundwater collected by the French drain will not be required if laboratory analysis of representative samples collected from that water shows that the discharge standards of the OU 1 Interim Measure/Interim Remedial Action (IM/IRA) Decision Document are not exceeded. The actual procedures that will be used to accomplish this need to take into account various factors such as holding tank capacity, maximum volumes collected by the French drain, and analytical turn-around time, in order to effectively segregate the groundwater collected by the French drain for representative sampling of that water. Contaminated water that is being pumped from the collection well still needs to be treated and must not be mixed with the French drain water unless both these waters exceed discharge standards.

Also, the regulatory agencies approved DOE's request that the OU 1 IM/IRA monitoring wells be sampled on a quarterly basis rather than monthly. EPA recommended that analytical results of contaminants detected from all wells in and around the groundwater plume emanating from Individual Hazardous Substance Site (IHSS) 119.1 and the French drain be included in the OU 1 IM/IRA Quarterly Report.

**April corrected water treatment totals:**

Treated groundwater this period:	19,729 gallons
Total treated to date: (through 23 Apr 95)	2,747,733 gallons

**May water treatment totals:**

Treated groundwater this period:	104,815 gallons
Total treated to date: (through 27 Mar 95)	2,852,548 gallons

**Planned Work for June**

**Interim Measure/Interim Remedial Action (IM/IRA)  
Treatment Facility**

- Normal operations will continue.
- Investigate procedures, systems, and capabilities that will be needed to accomplish the proposal for the discontinuation of the French drain water treatment. Areas of concern include holding tank capacity, maximum volumes collected by the French drain,

and analytical turn-around time, in order to effectively segregate the groundwater collected by the French drain for representative sampling of that water.

**Problems**

None

**Open Items**

None

## 2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound Areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources and then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of the small amount of contamination. However, as a result of the public review of the plans and following the agreement among the regulatory agencies and DOE, the single IM/IRA originally planned for OU 2 was divided into two IRAs in FY 90.

The second IM/IRA was established in late 1991. This Subsurface Investigation IM/IRA Environmental Assessment evaluates interim remedial technology actions for removal of residual free-phase Volatile Organic Compound contamination from IHSS 110. The Volatile Organic Compound-removal action involves *in situ* vacuum-enhanced vapor extraction technology. On October 19, 1992, the pilot test plan for the first stage of this removal project was delivered to the regulatory agencies. Fabrication of the mobile vapor extraction trailer began in spring of 1993, and by February 1994, the field installation had been completed and operational tests had begun.

The Final Field Report for the OU 2 Detailed Soil Vapor Survey Data was submitted in March 1994, and a pilot test for a soil vapor extraction as specified in the IM/IRA was completed in June 1994. Additionally, extended operations were completed in December 1994, and the Final Pilot Test Report for Test Site No. 1 was issued to the regulatory agencies on November 10, 1994. In March 1995, the implementation of Test Site Nos. 2 and 3 has been canceled from the OU 2 soil vapor extraction program. A new direction towards Accelerated Actions for Trench (T-3) has since been implemented.

The OU 2 remedial investigation that has been completed thus far has characterized the nature and extent of contamination in surface soils, subsurface soils, and groundwater. In 1986, an OU 2 Phase I Remedial Investigation (RI) of OU 2 was initially completed, and in December 1993, a Preliminary Draft of the OU 2 Phase II RFI/RI Report was delivered to the regulatory agencies. To date, several alternative technologies have been evaluated, and four TMs addressing different aspects of Risk Assessment have been submitted to the regulatory agencies. Three of four TMs have been approved, and approval is expected on the fourth. The Draft RFI/RI Report was delivered May 24, 1995. The Final OU 2 RFI/RI Report is due to the regulatory agencies in September 1995.

### 2.2.1 OU 2 ASSESSMENT

#### Scope of Work

Changes This Period

None

#### Technical Approach

Changes This Period

None

**IAG Milestone  
Accomplishments**

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93
Submit Preliminary Draft Phase II RFI/RI Report	16 Dec 93

**Future IAG Milestones  
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase II RFI/RI Report	09 Aug 93	21 Sep 95	27 Jul 95
Submit Draft CMS/FS Report	04 Nov 93	19 Jul 96	11 Apr 96
Submit Final CMS/FS Report	10 May 94	19 Dec 96	30 Aug 96
Submit Draft Proposed Plan	10 May 94	10 Jan 97	13 Sep 96
Submit Final Proposed Plan	09 Aug 94	25 Mar 97	26 Nov 96
Submit Draft Responsiveness Summary	13 Dec 94	25 Aug 97	06 May 97
Submit Final Responsiveness Summary	16 Mar 95	05 Dec 97	08 Aug 97
Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95	05 Dec 97	08 Aug 97
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	03 Mar 98	04 Nov 97
Submit Corrective Design/ Remedial Design Work Plan	15 Jun 95		03 Mar 98*
Submit Draft Title II Design	15 Feb 96		15 Feb 96

\* Completion date extension requested for March 3, 1998.

**May Work Activity Status**

**Remedial Investigation** - The OU 2 Draft Phase II RFI/RI Report was delivered to the regulatory agencies on May 24, 1995, ahead of schedule.

**Trench and Mound Site Characterization** - The OU 2 Trenches and Mound Site Characterization is continuing with geophysical surveys and soil sampling. The geophysical surveys are 80 percent complete, and the soil sampling is approximately 40 percent complete.

**Feasibility Study**

**Corrective/Remedial Action Objectives TM** - On May 17, 1995, responses to the regulatory agency comments for the Draft Final Corrective/Remedial Action Objectives TM #1 were transmitted to the regulatory agencies.



Screening of Remedial Technologies and Identification of Remedial Alternatives TM #2 - On May 24, 1995, TM #2, Screening of Remedial Technologies and Identification of Remedial Alternatives, was delivered to the regulatory agencies.

Detailed Analysis of Remedial Alternatives - Work on the groundwater flow model calibration has been completed, and testing has been initiated. The screening of remedial alternatives for soil is in progress.

## Technical Memoranda

### Project

### OU 2 - 903 Pad, Mound, and East Trenches

#### TM #1

##### TM Title

Development of Corrective/Remedial Action Objectives  
(Draft submittal in-process)

##### TM Status

When preparation was concluded: 27 Jan 95

Projected date of Draft submittal to EPA/CDPHE: 01 Feb 95

Actual date of Draft submittal to EPA/CDPHE: 06 Feb 95

Date comments were received: 23 Mar 95

Actual date of Draft Final Corrective Remedial Action Objectives

TM #1 submitted to EPA/CDPHE: 25 Apr 95

Date comments were received: To be determined

#### TM #2

##### TM Title

Screening of Remedial Alternatives (Draft submittal)

##### TM Status

When preparation was concluded: 27 Jan 95

Projected date of Draft submittal to EPA/CDPHE: 01 Mar 95

Actual date of Draft submittal to EPA/CDPHE: 24 May 95

Date comments were received from EPA/CDPHE: To be determined

#### TM #4

##### TM Title

OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 (Draft Final submittal in process)

##### TM Status

When Draft preparation was concluded: 08 Sep 94

Actual date of Draft submittal: 24 Oct 94

Date comments were received: 10 Nov 94

When Draft Final preparation was concluded: 09 Mar 95

Projected date of Final submittal to EPA/CDPHE: 26 May 95

Actual date of Final submittal to EPA/CDPHE: To be determined

Date comments were received from EPA/CDPHE: None required

#### TM #5

##### TM Title

Exposure Scenarios (Draft Final submittal in process)

##### TM Status

When preparation was concluded: 06 Dec 94

Projected date of Draft Final submittal to EPA/CDPHE: 31 Oct 94

Actual date of Draft Final submittal: 07 Dec 94

Date comments were received from EPA/CDPHE: 02 Feb 95 EPA,  
03 Mar 95 CDPHE

TM #6  
TM Title  
TM Status

Modeling  
When preparation was concluded: 15 Jan 93  
Projected date of submittal to EPA/CDPHE: 15 Jan 93  
Actual date of submittal to EPA/CDPHE: 15 Jan 93  
Date comments were received: 01 Apr 93 EPA, 31 Mar 93 CDPHE  
TM approved

TM #7  
TM Title  
TM Status

Surficial Soils  
When preparation was concluded: 07 Jan 93  
Projected date of submittal to EPA/CDPHE: 07 Jan 93  
Actual date of submittal: 12 Jan 93  
Date comments were received: 21 Jan 93  
TM approved

TM #8  
TM Title  
TM Status

Bedrock  
When preparation was concluded: 15 Mar 93  
Projected date of submittal to EPA/CDPHE: 01 Mar 93  
Actual date of submittal: 15 Mar 93  
Date comments were received: 14 Apr 93 EPA, 14 Apr 93 CDPHE  
TM approved

TM #8 Addendum  
TM Title  
TM Status

Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)  
When preparation was concluded: Jun 93  
Projected date of submittal to EPA/CDPHE: Jun 93  
Actual date of submittal: Jun 93  
Date comments were received: FY 93  
TM addendum approved

TM #9  
TM Title  
TM Status

Chemicals of Concern  
When preparation was concluded: 08 Aug 94  
Projected date of submittal to EPA/CDPHE: 03 Oct 94  
Actual date of Draft submittal: 30 Aug 94  
Date comments were received: 05 Oct 94  
TM approved

TM #10  
TM Title  
TM Status

Toxicity Assessment  
When preparation was concluded: 09 Aug 94  
Projected date of submittal to EPA/CDPHE: 30 Aug 94  
Actual date of Draft submittal: 02 Sep 94  
Date comments were received: 05 Oct 94  
TM approved

Planned Work for June

• Work on the trench characterization IM/IRA operations, the CMS/FS, and on the Treatability Studies will continue.

Problems

None

**Open Items**

None

**2.2.2 OU 2 REMEDIATION****Scope of Work  
Changes This Period**

On March 2, 1995, a Baseline Change Control Proposal to transfer funds from the OU 2 Soil Vapor Extraction Test Sites 2 and 3 work packages to a new Subsurface IM/IRA work package that is entitled OU 2 Accelerated Action (T-3) was approved. The existing OU 2 Soil Vapor Extraction Test Sites 2 and 3 internal milestones have been canceled, and new OU 2 Accelerated Action milestones have been established.

**Technical Approach  
Changes This Period**

The OU 2 Accelerated Action (T-3) budget has been completed. Work on the Alternative Analysis document continued.

**IAG Milestone  
Accomplishments**

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary	11 Jan 91
and Final IM/IRA Decision Document	
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report	01 Apr 92
(Phase I Granular Activated Carbon)	
Complete IM/IRA Construction	24 Apr 92
(radionuclides removal system)	
Begin Field Treatability Testing	27 Apr 92
(radionuclides removal system)	
Submit Final Treatability Test Report	02 Jun 92
(Phase I Granular Activated Carbon)	
Submit Subsurface Site 1 Draft Test Plan	29 Oct 92
Submit Subsurface Site 1 Final Test Plan	12 Jan 93
Submit Draft Pilot Test Plan Site 2	24 Jun 93
Submit Draft Surface Water Field	13 Jul 93
Treatability Report	
Submit Final Phase II Treatability Study Report	26 Jan 94
Begin Subsurface IM/IRA Test I	14 Feb 94
Submit Subsurface Site 2 Draft Test Plan	06 Jul 94
Submit Draft Pilot Test Report Site 1	10 Nov 94
Submit Final Pilot Test Report Site 1	10 Nov 94
Start-up Soil Vapor Extraction Test Site 2	02 Mar 95*
Submit Draft Pilot Test Report Site 2	02 Mar 95*
Submit Final Pilot Test Report Site 2	02 Mar 95*
Submit Draft Pilot Test Plan Site 3	02 Mar 95*
Submit Final Pilot Test Plan Site 3	02 Mar 95*
Complete Pilot Unit 3 Installation	02 Mar 95*

**IAG Milestone  
Accomplishments**

Submit Draft Pilot Test Report Site 3	02 Mar 95*
Submit Final Pilot Test Report Site 3	02 Mar 95*
Submit Liquid Removal Draft Proposed Action Memorandum	03 Mar 95

- Because work scopes were modified, the Soil Vapor Extraction Test Sites 2 and 3 activities were canceled. New milestone dates to reflect new work scopes, which use new technologies, have been negotiated.

**Future IAG Milestones  
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Alternatives Analysis	11 Apr 95		11 Apr 95
Submit Liquid Removal Final Proposed Action Memorandum	15 May 95		15 May 95
Submit Acceptance of Alternatives Analysis/Proposed Action Memorandum by Public	31 Jul 95		31 Jul 95
Award Equipment System Design Contract	12-Sep 95		12 Sep 95
Finalize Site Designs	24 Oct 95		24 Oct 95
Submit Approval of <i>in situ</i> Vitrification Project Management Plan	14 Nov 95		14 Nov 95
Submit Approval of Site Implementation Plan	14 Nov 95		14 Nov 95

**May Work Activity Status**      Soil Vapor Extraction - In March 1995, DOE received the Draft Final OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 TM #4 for review.

Source Removal - An engineering scale test is expected to begin in May 1994.

**Surface Water IM/IRA Operations**

OU 2 Field Treatability Unit Water Treatment Facility - Activities at the OU 2 Field Treatment Facility Water Treatment Facility remained the same for the month of May 1995. All activities are on schedule.

Surface Water IM/IRA treatment activities included the following:

Treated water this month:	14,855 gallons
Total treated to date:	24,821,025 gallons

On May 17, 1995, high storm waters in South Walnut Creek Basin damaged the electrical feeds. Power was disconnected and SW-59 water is being pumped into a temporary tank. A new collection tank is being installed at the source and should be completed by June 1995.

Sitewide Treatment Facility - The Sitewide Treatment Facility activities for the month of April 1995 continued as scheduled.

Offsite Disposal of Field Treatability Unit Sludge - On May 22, 1995, the initial shipment of 72 drums occurred. The remaining 250 drums are required to be shipped to the waste removal subcontractor by July 30, 1995.

Surface Water 59 -Comments have been incorporated in the SW-59 Risk Assessment. Once appropriate quality assurance measures have been reviewed, the SW-59 Risk Assessment will be submitted to the regulatory agencies. Submittal should occur the first week of June 1995. Treatment alternatives to replace the OU 2 Field Treatability Unit will also be reviewed in June 1995.

**Planned Work for June**

- Work on the Subsurface IM/IRA OU 2 Accelerated Action T-3 activities and on the Surface Water IM/IRA operations will continue.
- The Draft RFI/RI Report comments will be incorporated, and the report will be delivered to the regulatory agencies.
- Groundwater flow model documentation will be completed.
- A presentation of TM #2 to assist the regulatory agencies with document review is planned.

**Problems**

None

**Open Items**

None

### 2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

#### Scope of Work

Changes This Period                      None

#### Technical Approach

Changes This Period                      None

#### IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

#### Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	30 Oct 95	30 Oct 95
Submit Final Phase I RFI/RI Report	13 Dec 93	11 Jul 96	11 Jul 96

#### May Work Activity Status

On May 19, 1995, DOE received for review the resolution to the regulatory agency comments on the CDPHE Chemical of Concern Conservative Screen Letter Report. It is expected that the Final CDPHE Chemical of Concern Conservative Screen Letter Report will be submitted to the regulatory agencies in June 1995.

On May 24, 1995, the regulatory agency comments on the Technical Memorandum (TM) #5, *Toxicity*, were received. These comments are being assessed for appropriate resolution.

The contract to complete construction of the air monitoring station at 88th Avenue and the meteorological monitoring station south of the Great Western Reservoir was awarded to the subcontractor on May 17, 1995. Work is expected to begin in June 1995.

## Technical Memoranda

### Project

### OU 3 - Offsite Areas

#### TM #1 (RFI/RI)

##### TM Title

##### TM Status

Field Changes to RFI/RI the Work Plan

When preparation was concluded: 10 May 93

Projected date of submittal to EPA/CDPHE: 10 May 93

Actual date of submittal: 23 Apr 93

Date comments were received: 05 Jan 94

#### TM #1 (CMS/FS)

##### TM Title

##### TM Status

Preliminary Remediation Goals

When preparation was concluded: In progress

Projected date of submittal to EPA/CDPHE: 11 Jul 96

Date comments were received: To be determined

#### TM #2

##### TM Title

##### TM Status

Exposure Scenarios for the Human Health Risk Assessment

When preparation was concluded: 12 May 93

Projected date of submittal to EPA/CDPHE: 12 May 93

Actual date of submittal: 03 May 93

Date comments were received: 15 Jul 93

#### TM #3

##### TM Title

##### TM Status

Modeling

When preparation was concluded: Jan-95

Projected date of submittal to EPA/CDPHE: 02 Mar 95

Actual date of submittal: 30 Mar 95

Date comments were received: 21 Apr 95

#### TM #4

##### TM Title

##### TM Status

Contaminants of Concern

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: 20 Sep 94

Actual date of submittal: 26 Sep 94

Date comments were received: 09 Jan-95

#### TM #5

##### TM Title

##### TM Status

Toxicity

When preparation was concluded: Sep 94

Projected date of submittal to EPA/CDPHE: 10 Nov 94

Actual date of submittal: 11 Oct 94

### Planned Work for June

- The Draft RI Report will continue to be developed.
- The CDPHE Conservative Screen Letter Report will be approved.
- Work on the Proposed Plan will begin. Submittal of this document is expected in September 1995.
- Installation of the remaining air monitoring station and the meteorological monitoring station is expected to begin in June 1995.

Problems

None

Open Items

None



# CORRECTION

THE PRECEDING 26 DOCUMENTS HAVE BEEN  
REPHOTOGRAPHED TO ASSURE ALL DOCUMENTS  
WERE PHOTOGRAPHED

## 2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 comprises five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

The ponds were relined with various upgraded materials as technology improved through the early 1960s and 1970s; however, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) Disposition of noncertified pondcrete, saltcrete, and pond sludge as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by the regulatory agencies and DOE; (3) the OU 4 assessment and remedial action in accordance with the IAG, which superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the Site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management is a necessary precursor to the OU 4 assessment and remediation, while the pad operations are considered necessary support activities.

Work in the four technical areas was planned to close the ponds and remediate OU 4. The scope of the work was to (1) remove water and sludge from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related groundwater, (3) store ponds wastes in compliance of all regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as required, and (7) remediate groundwater as required.

The RCRA/CERCLA investigation Phase I field work began in FY 93 and will continue through construction of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation Area with other areas funded to provide necessary precursor and support activities to allow the IAG scope to be completed.

In July 1993, the IM/IRA to treat the Interceptor Trench System water was completed, and the operation of the system continues. The Interceptor Trench System water is treated in the Building 374 treatment facility. Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. Pond sludge removal operations in four of the five solar evaporation ponds was completed by August 1994. Operations to remove the sludge in Pond 207C was completed in January 1995.

In April 1995, an IM/IRA/Environmental Assessment Decision Document that proposed the Phase I pond closure and remedy completed public comment. The proposal recommended the use of newly promulgated RCRA regulations designed to improve corrective actions. Contaminated soil, pond sludge, pondcrete, and debris will be permanently placed into the pond closure and isolated to protect human health and the environment. The regulatory agencies and DOE are evaluating the proposal. DOE has requested an extension of all OU 4 IAG milestones to allow time for the regulatory agencies' evaluation and in response to the FY 95 funding decisions.

## 2.4.1 OU 4 ASSESSMENT

### Scope of Work

#### Changes This Period

Because of funding restraints, there have been scope reductions. The project scope is under re-evaluation by the regulatory agencies and DOE.

### Technical Approach

#### Changes This Period

The current baseline will not be met because of the re-evaluation of the path forward and funding restraints.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90
Submit Draft Phase II RFI/RI Work Plan	27 May 94
Submit Final Phase II RFI/RI Work Plan	02 Sep 94

### Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Report	16 Apr 96		16 Apr 96*
Submit Final Phase II RFI/RI Report	11 Sep 96		11 Sep 96*

- \* Milestone will be missed because of the re-evaluation of the path forward and funding restraints. A forecast date is not known.

### May Work Activity Status

The Phase I sampling in Pond 207C was replanned to be performed by the Phase II subcontractor to realize cost savings. Because of heavy precipitation, Pond 207C contains water that will delay sampling.

On March 23, 1995, the Seismic Refraction Survey was completed. On March 15, 1995, the geoprobe work began and is scheduled to be completed by June 9, 1995.

### Technical Memoranda

#### Project

#### OU 4 - Solar Evaporation Ponds

#### TM #1

#### TM Title

#### TM Status

#### Vadose Zone Investigation

Draft submitted to EPA/CDPHE: 16 Nov 92

Comments received: 30 Nov 92

Conditional approval: 30 Nov 92

Projected submittal of Final TM to EPA/CDPHE: 15 Dec 92

Actual submittal date of Final TM: 15 Dec 92

Submittal of TM #1 Vadose Zone Schedule: 19 May 93

EPA/CDPHE final approval of TM #1: 17 Jun 93

TM #2  
TM Title  
TM Status

Modification to Field Activities  
Draft submitted to EPA/CDPHE: 18 Mar 93  
Comments received: 07 May 93  
Projected submittal of Final TM to EPA/CDPHE: 07 Jun 93  
Actual submittal date of Final TM: 09 Jun 93  
EPA/CDPHE final approval of TM #2: 30 Jun 93

TM #3  
TM Title  
TM Status

Environmental Evaluation  
Draft submitted to EPA/CDPHE: 19 Mar 93  
Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93  
Projected submittal of Final TM to EPA/CDPHE: 30 Apr 93  
Actual submittal date of Final TM: 02 Jul 93  
EPA/CDPHE final approval of TM #3: 30 Jul 93

TM #4  
TM Title  
TM Status

Human Health Risk Assessment Exposure Scenarios  
Draft submitted to EPA/CDPHE: 19 Mar 93  
Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93  
Projected submittal of Final TM to EPA/CDPHE: 11 Jun 93  
Actual submittal date of Final TM: 11 Jun 93  
EPA/CDPHE final approval of TM #4: 25 Jun 93

**Planned Work for June**

- The field activities for the Phase II RFI/RI Program are scheduled to continue.

**Problems**

None

**Open Items**

None

**2.4.2 OU 4 REMEDIATION**

**Scope of Work  
Changes This Period**

Because of funding restraints, there have been scope reductions. The scope is under re-evaluation by the regulatory agencies and DOE.

**Technical Approach  
Changes This Period**

The current baseline will not be met because of the re-evaluation of the path forward and funding restraints.

**IAG Milestone  
Accomplishments**

Draft Phase I Proposed IM/IRA Decision Document	27 May 94
All Solar Ponds Emptied of Water and Sludge	15 Jan 95
Final Phase I Proposed IM/IRA Decision Document	01 Feb 95

**Future IAG Milestones  
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit IM/IRA-Responsiveness-Summary	25 Jan 95	09 Jun 95	On schedule
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	29 Aug 95*	
Submit IM Title-II Design Work Plan	24 Jun 96	18 Dec 95*	
Start of Soil Excavation Relative to IHSS 101 Closure	28 Jan 97	28 Oct 96*	

- Milestone will be missed because of the re-evaluation of the path forward and funding restraints. A forecast date is not known.

**May Work Activity Status**

**Waste Treatment**

On May 10, 1995, the scheduled status meeting at the Rocky Flats Environmental Technology Site was canceled because of funding restrictions. On May 24, 1995, a Stop Work Order was sent to Rocky Flats Environmental Technology Site Procurement. On May 26, 1995, the Inventory Pondcrete Conceptual Design Report and the OU 4 Consolidated Waste Treatability Study were placed on hold. Contract closeout or reauthorization decisions are on hold pending resolution of scope and budget issues.

**Waste Storage and Disposal**

As of May 31, 1995, a total of 3,302 metal containers were repacked and stacked. Recent communication with the CDPHE established that for the waste being stored and the way the waste is being stored the asphalt pad provides a "sufficiently" impervious surface to meet Part B Permit requirements. This will reduce required upgrades to meet the Part B Permit requirements. Enhanced run-off/run-on control will be required.

**Interim Remedial Action**

**Water Management** - The modular tanks have a remaining usable volume of about 301,000 gallons. May 1995 was a very wet month, and over a million gallons of water flowed into the modular tanks. This high flow required water to be placed in the third tank, which is normally kept empty for an emergency response. The RCRA inspections and compressor rotations in Building 910 were satisfactorily completed. Also, the RCRA inspections of the Modular Storage Tanks were completed.

**Interim Measure Remediation**

**IM/IRA Decision Document** - On April 11, 1995, the public and regulatory agencies' comment period for the proposed IM/IRA Environmental Assessment Decision Document was concluded, and DOE received approximately 225 comments during this period. Rocky Flats Environmental Technology Site personnel reviewed the

first draft of the Responsiveness Summary and changes are being made to the document. The IM/IRA Draft Responsiveness Summary is on schedule and will be delivered to the regulatory agencies by June 9, 1995.

Funding constraints and potential technical scope changes during the month have essentially stopped work in some areas, while only minimal support remains in others. These events have necessitated an extension request for all IAG Table 6 milestones after the Phase I IM/IRA Draft Responsiveness Summary. The request is being forwarded to the regulatory agencies.

**Preconstruction** - Environmental radiological control technician support has been made available to support the Site Stripout activity on a continuous basis. The subcontractor has completed the fencing for the installation of radiation control area boundary signs so the existing jersey barriers can be removed. It is expected that the barriers will be removed utilizing a crane currently in use for relocating cargo containers. All excess equipment between the pond berms will be checked for contamination and relocated to a central point and staged for final disposition.

All but five cargo containers have been relocated from behind Building 964. There are also two containers awaiting relocation from near Building 788. All relocation of cargo containers will be completed by June 1995. This effort has been delayed by inclement weather.

Removal of excess materials inside Building 788 has been expedited and was completed one week earlier than expected. There is still Operations equipment located to the north of the 207C Pond berm that is awaiting radiological determination and dispositioning to Property Utilization and Disposal. The equipment has been too wet to perform the surveys needed to characterize this equipment because of inclement weather. Operations will continue to manage the dispositioning of this equipment.

Issuance of the subcontract for the Phase A Removals has been stopped because of funding constraints.

Comments on the draft proposal of the Phase I Remedial Construction security activities were incorporated, and on May 5, 1995, DOE received the plan. On May 8, 1995, the proposal was accepted.

The Request For Proposal for the overhead electrical power activity has been pulled because of funding constraints. This will impact the Sewage Treatment Plant Upgrade Project because it was dependent upon receiving power from these electric power installations. Also, the Air Quality organization was relying on one new power pole to mount an air sampler. The Project Managers for both projects have been notified.

The 90 percent Title II design for the engineered barrier is progressing on schedule. On June 14, 1995, the design will be transmitted to the Rocky Flats Environmental Technology Site personnel. Concern has been raised as to the viability of the use of asphalt concrete as the primary (and only) hydraulic barrier for the prevention of infiltration of precipitation into the contaminated media. Specifically in question is the proposed service life of 1,000 years. Literature reviews and contacts with asphalt experts are being conducted.

#### **Interim Measure Sludge**

Activities to remove sludge from the clarifier to sludge holding tanks have been deferred because of funding reductions. The transfer of 207C Pond material from the metal crates is proceeding. As of May 26, 1995, forty-six metals have been emptied. Problems have been encountered in filling the tanks with the material from the metal containers because of debris (mostly tar paper) plugging the inlet piping. Changes to the tank inlets were successful and off loading has become much more reliable. In addition, a new vacuum pump has been ordered to improve the efficiency of the sludge transfer from the metals to the sludge holding tanks. Twelve additional tanks were ordered and received. Eight of these tanks have been installed in Tent 6, and four have been certified for use. The remaining tank certifications are in progress.

#### **Planned Work for June**

- The IAG milestone "Submit IM/IRA Responsiveness Summary" will be met on schedule.
- The transfer of salt in metal containers to sludge holding tanks will continue.
- The site strip-out activity will continue.
- The relocation of cargo containers will be completed.
- The 904 repack will continue.
- Shutdown of most other project elements will be completed.

#### **Problems**

Inadequate Radiological Control Technician support is impacting lower priority Solar Ponds Projects (areas with float) such as site strip-out activities. Corrective actions have been implemented. Two Radiological Control Technician have been reassigned from ER areas, which were just completed.

#### **Open Items**

The OU 4 engineered barrier issues that initiated a dispute resolution in July 1994 continue. Although the dispute formally ended on July 27, 1994, full regulatory support was not achieved. Both the EPA and the DOE support the plan that calls for the placement of minimally treated sludge and pondcrete under the engineered barrier in lieu of an offsite disposal. CDPHE, however, supports only the

placement of treated pond sludge under the cap and has rejected plans that included pondcrete. If pondcrete is excluded, EPA support may not be maintained. Impacts of this decision, coupled with DOE imposed funding reductions and reassessment of path forward, will cause future IAG Table 6 milestones to be missed. These changes will cause a significant increase in the OU 4 life-cycle costs.

A key OU 4 assumption is the use of the Corrective Action Management Unit/Temporary Unit for treating certain remediation wastes during Phase I Remediation. Based upon direction from CDPHE during the Joint Working Sessions, DOE plans to use the Corrective Action Management Unit and Subpart X regulations to promote significant cost savings and schedule acceleration while fully protecting human health and the environment. However, the CDPHE has not communicated whether additional requirements will be imposed.

Tent 12 and the pad area south on the 750 Pad (for pondcrete) and Tent 11 on the 904 Pad (pondcrete) are required to treat the sludge and pondcrete. These areas need to be made available by either moving wastes to another location or preferably by shipping all saltcrete that complies with the Landfill Disposal Restrictions to an offsite location. Neither option is currently funded, although partial funding for saltcrete disposal does exist. A substantial increase in the funding for saltcrete disposal is needed to execute this option. The first population of inventoried saltcrete has been declared Landfill Disposal Restriction compliant by Rocky Flats Environmental Technology Site personnel. Preparations are being made to ship this waste to the waste subcontractor.



## 2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, comprises the assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS-209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196).

Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, storm water runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

### Scope of Work

Changes This Period                      None

### Technical Approach

Changes This Period                      None

### IAG Milestone

Accomplishments                      Submit Draft Phase I RFI/RI Work Plan                      05 Apr 91

Submit Final Phase I RFI/RI Work Plan                      30 Aug 91

### Future IAG Milestones

Through FY 96

Milestone Name	Planned Date	Approved Extension Status	Forecast Date
Submit Draft Phase I RFI/RI Report	30 Nov 93	01 Nov 95	11 May 95
Submit Final Phase I RFI/RI Report	03 May 94	02 Apr 96	14 Nov 95

### May Work Activity Status

The comments made by the regulatory agencies on TM #12, *Exposure Scenarios*, were satisfactorily dispositioned. On May 12, 1995, the comments were incorporated into the Final TM and were submitted for delivery to the regulatory agencies.

By means of TM #15, *Addendum to the Field Sampling Plan*, the second quarter of groundwater monitoring was completed. Borehole logs have been prepared and are undergoing the required quality assurance review. Preparation of LogIt Logs continues. Monthly water level measurements continue.

The Human Health Risk Assessment continues with the risk calculations and the exposure concentration assessment. Preliminary results have been obtained, and these results are being reviewed to ensure that the risk models are operating correctly. Preparation of the Human Health Risk Assessment Section of the Draft Phase I RFI/RI Report has been initiated. The sitewide central tendency preliminary remediation goals for OU 5 and the radiological preliminary remediation goals that incorporate the new slope factors were updated.

Preparation of sections of the Draft Phase I RFI/RI Report continues. Chapter 2.0, Field Operations and Investigations, and Chapter 3.0, Physical Characteristics, are being updated to incorporate the results of the TM #15 Field Investigations. Also, Section 3.0 is being revised to incorporate information contained in the geologic characterization and the geochemical characterization reports that were recently submitted.

The Ecological Risk Assessment is still on the critical path for completing the RFI/RI Report.

The EPA has requested a few minor changes to the Chemicals of Concern TM #11. These changes will be incorporated in the TM as a Document Modification Request.

On May 9, 1995, the Draft Air Modeling Report for the Human Health Risk Assessment was completed and was submitted for an internal review

The second draft of TM #1, *Remedial Action Objectives*, for the FS was completed. Also, a Synopsis Letter for this TM was prepared for review by the Rocky Flats Environmental Technology Site personnel.

The geotechnical laboratory analyses were completed and will be used for the slope stability analysis of the Original Landfill for incorporation in the FS.

The Draft Task 7 - Remedial Alternative List for the FS-TM #2 was completed and is available for review by the Rocky Flats Environmental Technology Site personnel.

## Technical Memoranda

### Project

### OU 5 - Woman Creek Priority Drainage Remedial Investigation

#### TM #1

#### TM Title

#### TM Status

Surface Water and Sediments

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

#### TM #2

#### TM Title

#### TM Status

Surface Geophysics

When preparation was concluded: 30 Nov 92

Actual date of submittal: 13 Oct 92

#### TM #3

#### TM Title

#### TM Status

Soil Sampling at IHSS 115

When preparation was concluded: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4	Soil Sampling at IHSS 133
TM Title	When preparation was concluded: 07 Jun 93
TM Status	Actual date of submittal: 12 Apr 93
TM #5	Soil Gas Sampling at IHSS 115
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 25 Mar 93
TM #6	Cone Penetrometer at IHSS 115
TM Title	When preparation was concluded: 14 Apr 93
TM Status	Actual date of submittal: 25 Mar 93
TM #7	Soil Borings at IHSS 133
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 19 Feb 93
TM #8	Monitoring Wells at IHSS 115
TM Title	TM #8 has been canceled and has been replaced by a letter outlining
TM Status	the justification for the location of the wells in IHSS 115.
TM #9	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete
TM Title	Wash Pad
TM Status	Actual date of the Draft TM submittal to EPA/CDPHE: 06 May 93
	Actual date of the Final TM submittal to EPA/CDPHE: 28 Jun 93
TM #10	Soil Borings at IHSS 209
TM Title	When preparation was concluded: 06 Mar 93
TM Status	Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93
TM #11	Contaminants of Concern
TM Title	Actual date of the Final TM submitted to EPA/CDPHE: 20 Mar 95
TM Status	EPA approval pending
TM #12	Exposure Scenarios
TM Title	Actual date of the submittal of the Final TM to EPA/CDPHE:
TM Status	12 May 95
	EPA approval pending
TM #13	Modeling
TM Title	Actual date of submittal of the Final to EPA/CDPHE: 29 Nov 94
TM Status	
TM #14	Toxicity Assessment
TM Title	Actual date of submittal of the Final to EPA/CDPHE: 14 Nov 94
TM Status	

TM #15  
TM Title  
TM Status

Addendum to the Field Sampling Plan  
Actual date of the Final TM submittal to EPA/CDPHE: 31 Aug 94

**Planned Work for June**

- The Accelerated Action in OU 5 will be completed. This action involves the picking up of debris near IHSS 133 that consists of low-level contaminated metal pieces on the surface.
- The Human Health Risk Assessment and the Environmental Risk Assessment will continue along with the preparation of the RFI/RI Report.
- The development and screening of alternatives for the CMS/FS will continue.

**Problems**

None

**Open Items**

Approval of TM #14, *Toxicity Assessment*, is pending.

Approval of TM #11, *Chemicals of Concern*, is pending.

## 2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1); the Trenches A, B, and C (IHSSs 166.1, 166.2, and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

### Scope of Work

Changes This Period

None

### Technical Approach

Changes This Period

None

### IAG Milestone

Accomplishments

Submit Draft Phase I RFI/RI Work Plan

19 Apr 91

Submit Final Phase I RFI/RI Work Plan

16 Sep 91

### Future IAG Milestones

Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	02 Oct 95	19 Apr 95
Submit Final Phase I RFI/RI Report	07 Jan 94	21 Feb 96	20 Nov 95

### May Work Activity Status

On May 17, 1995, the review of the Human Health Risk Assessment by the Rocky Flats Environmental Technology Site personnel was completed. OU 6 Risk Assessment personnel began writing an additional section of the Human Health Risk Assessment that includes the data from the polychlorinated biphenyl sampling project.

Work on the ecological chemical of concern screening process continued. On May 11, 1995, the database cleanup was finished, and on May 12, 1995, calculation of exposure concentrations began. On May 18, 1995, the OU 2 polygon screens were completed. On May 31, 1995, a meeting, which presented the results of the Walnut and Woman Creek screens, was held.

Rocky Flats Environmental Technology Site personnel are waiting for approval from the regulatory agencies on TM # 2, *Exposure Assessment*, and TM # 3, *Model Descriptions*. Also, Rocky Flats Environmental Technology Site personnel are waiting for comments on the Draft Final Ecological Risk Assessment Methodology Site Conceptual Model. EPA has stated that it will approve each of these documents.

The regulatory agencies continued to review TM #3 of the Ecological Risk Assessment Methodology. Comments were due in May 1995 but have not been received.

Revisions were made to the Preliminary Draft Chapter 5, *Fate and Transport*.

On May 16, 1995, Rocky Flats Environmental Technology Site personnel met to decide whether to include the Radiological Ambient Air Monitoring Program sample data in the air pathways analysis as required by Appendix H of the Work Plan. The meeting concluded that the RFI/RI Report will not include the Radiological Ambient Air Monitoring Program data. A statement will be included to discuss the lack of a connection between the modeling results and the existing air sample data.

On May 17, 1995, Rocky Flats Environmental Technology Site personnel met to formulate a plan to begin assembling the RFI/RI Report and to begin filling in gaps. Rocky Flats Environmental Technology Site personnel have completed Chapters 1-5. Chapters 8 and 9 will be combined into one chapter that addresses summary and conclusions along with data gaps. The appendixes are nearly 100 percent complete.

On May 26, 1995, the Walnut Creek and Woman Creek watershed ecological chemical of concern screens were completed. On May 31, 1995, a meeting was held with the regulatory agencies to present the results.

The Final TM #1 for OU 6 was delivered to the regulatory agencies.

The Final Task 6, Representative Process Options, was completed and is currently being reviewed by Rocky Flats Environmental Technology Site personnel.

Work on developing the Task 7, Remedial Alternative List for the OU 6 TM # 2, continues. A FS review meeting with the regulatory agencies has been scheduled for June 7, 1995.

As a cost effectiveness measure, the FS work will be "brought in-house." After Task 7 is completed for OUs 5 and 6, the in-house resources will begin with Task 8, Screening of Alternatives. Also, Rocky Flats Environmental Technology Site personnel are investigating the possibility that chapters of the RFI/RI Report on the Identification of Data Gaps and Summary and Conclusions can be written in-house.

Sprinkler Pipe Cleanup, B-3 Pond Cleanup, and Filter Bags Disposal  
Surveys of Sprinkler Pipe are complete. Weather continues to be a barrier to removing pipe because wet weather prohibits vehicles from moving around in the buffer zone as they may disturb the soil and enhance erosion. When the OU 4 Cargo Container move project is

complete, pipe removal efforts will resume. This project has been utilizing the operators and laborers who are needed for sprinkler pipe removal.

On May 16, 1995, the procedure for the Filter Bag Project went to the Operational Readiness Committee for review and was finalized. The ten-roll-offs that contained filter bags were placed in the landfill on May 24-25, 1995. This accelerated action is complete.

## Technical Memoranda

### Project

### OU 6 - Walnut Creek

#### TM #1

#### TM Title

#### TM Status

#### Work Plan Modifications

Approved by EPA: 08 Jan 93

#### TM #2

#### TM Title

#### TM Status

#### Exposure Assessment

When preparation of the Draft TM was concluded: 07 Jul 93

Date the Draft TM was submitted to EPA/CDPHE: 07 Jul 93

Actual date of submittal of the Final TM to EPA/CDPHE: 14 Feb 95

#### TM #3

#### TM Title

#### TM Status

#### Modeling Description

When preparation of Draft was concluded: 10 Nov 93

Date the Draft TM was submitted to EPA/CDPHE: 10 Nov 93

Date EPA/CDPHE comments were received: 23 Dec 93

Date the Final TM was submitted to EPA/CDPHE: 14 Jan 94

Actual date of submittal of the Second Final TM to EPA/CDPHE: 30 Jan 95

#### TM #4

#### TM Title

#### TM Status

#### Contaminants of Concern

Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94

Date EPA/CDPHE comments were received: 03 Oct 94

Approved on 28 Dec 94

#### TM #5

#### TM Title

#### TM Status

#### Toxicity Factors

Date the Draft Final TM was submitted to EPA/CDPHE: 23 Aug 94

Deleted from submittal by a letter dated 28 Dec 94

### Planned Work for June

- Chapter 8, *Summary and Conclusions*, excluding the ecological Risk Assessment conclusions will be completed.
- The Human Health Risk Assessment to include the polychlorinated biphenyl project data will be revised.
- On June 7, 1995, a meeting will be held with the regulatory agencies to begin scoping the tasks necessary to complete the assessment of OU 6.

Problems

None

Open Items

Approvals of TM #3, *Modeling Description*, and TM #2, *Exposure Assessment*, are pending from the regulatory agencies.

Comments from the regulatory agencies on the Draft Final Ecological Risk Assessment Methodology Site Conceptual Model are pending.



## 2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area, which is a section of the Present Landfill located in the southwest corner, used between 1986 and 1987 as a temporary storage area for hazardous waste. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

### Scope of Work

#### Changes This Period

The technical approach to implementation of the leachate collection and treatment system was modified to be more compatible with the final remedy under consideration.

### Technical Approach

#### Changes This Period

Proposed to regulatory agencies to modify the Proposed Action Memorandum to be compatible with the final remedy.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	Deleted *
Submit Draft Phase II RFI/RI Work Plan	Deleted *
Submit Final Phase I RFI/RI Report	Deleted *
Submit Final Phase II RFI/RI Work Plan	Deleted *
Submit Preliminary Draft Proposed Action Memorandum (leachate) to CDPHE/EPA <sup>1</sup>	13 Oct 94
Submit Draft Revised Phase I Work Plan Technical Memorandum <sup>2</sup>	23 May 94
Submit Final Phase I Work Plan Technical Memorandum <sup>2</sup>	08 Sep 94
Submit Final Draft Proposed Action Memorandum (leachate) for Public Comment <sup>3</sup>	13 Oct 94
Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA <sup>4</sup>	30 Nov 94

\* CDPHE deleted per Oct 21, 1994, letter.

<sup>1</sup> CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Preliminary Draft IM/IRA to CDPHE/EPA"

<sup>2</sup> New milestones per CDPHE October 21, 1994, letter.

- 3 CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Draft IM/IRA for Public Comment"
- 4 CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Responsiveness Summary IM/IRA to CDPHE/EPA"

**Future IAG Milestones  
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	31 Aug 95	31 Aug 95
Submit Final Phase I Proposed IM/IRA Decision Document	05 Jan 96		03 Jul 95
Submit IM/IRA Responsiveness Summary	14 Aug 96	01 Apr 96	01 Apr 96
<u>Landfill Leachate Collection Proposed Action Memorandum</u>			
Submit Revised Proposed Action Memoranda	15 Jun 95		15 Jun 95
Begin Seep Collection	16 Aug 95		16 Aug 95
Submit Draft IM Title II Design	30 May 96		30 May 96

**May Work Activity Status**

On May 4, 1995, the draft screening-level ecological Risk Assessment for surface water, seep water, and pond sediments was completed.

EPA, DOE, and Rocky Flats Environmental Technology Site personnel visited the Cooley Gravel Company at Interstate 76 and 88th Avenue to observe installation of a slurry wall around a gravel pit.

The proposed slurry wall location was staked. The drawings for the slurry wall design are being prepared. They include a site map, site plan with existing conditions, slurry-wall location, surface water diversion plan, temporary surface-water diversion plan, fence plan, slurry wall details, and other details. The technical specifications, which include bidding and contract requirements, general requirements, site work (site clearing, general earthworks, slurry wall construction, haul road construction, surface water drainage facilities, fence installation, and construction), and concrete, are under preparation. The construction Quality Assurance Plan, which includes a description of the project, operations and responsibilities, project meetings, quality assurance observation and test, and documentation and audits on corrective actions, is under preparation.

Mean concentrations of contaminants in seep water and pond water to Applicable or Relevant and Appropriate requirements were compared to determine treatment levels.

DOE, Rocky Flats Environmental Technology Site personnel, and a representative from the Colorado School of Mines met regarding the construction of a passive flow-through treatment cell for landfill leachate prior to discharge of the seep to the landfill pond. All parties were in agreement on the conceptual design, and the Colorado School of Mines' representative will provide a cost proposal, Work Plan, and schedule in two weeks. A contract with the University Consortium already exists and will be utilized for this task. The CDPHE was very receptive to the proposed passive flow-through treatment cell.

A Statement of Work to subcontract technical services for a passive collection and treatment system at the Present Landfill Seep was prepared. Personnel prepared a resource-loaded schedule to support the accelerated action. Based on the change in scope of the seep collection and treatment system, Rocky Flats Environmental Technology Site personnel began a modification of all associated documentation. This documentation includes the Health and Safety Plan, the wetlands assessment, the soil disturbance permit, and the readiness review.

Rocky Flats Environmental Technology Site personnel began a modification of the Proposed Action Memorandum to meet the revised milestone of June 15, 1995.

#### Technical Memoranda

##### Project

OU 7 - Present Landfill

TM

TM Title

TM Status

Revised Work Plan

Submitted the Draft TM to EPA/CDPHE for review: 23 May 94

Comments received: 01 July 94

Submitted the Final TM transmitted to EPA/CDPHE: 09 Sep 94

Approved by the regulatory agencies: 30 Sep 94

##### Planned Work for June

- Preparation of the IM/IRA Decision Document will continue.
- The Title II design, technical specifications, health and safety requirements, construction quality control plan, wetlands assessment, and soil disturbance permit will be prepared.

##### Problems

None

##### Open Items

The concurrence from the regulatory agencies on issues concerning the Proposed Action Memorandum for leachate collection and treatment.

The postponement of the Proposed Action Memorandum activities will affect the associated milestone of the "Begin Seep Collection" that is scheduled to be completed on August 16, 1995.

## **2.1A INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14)**

The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of a close proximity to each other and similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

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### **Scope of Work Changes This Period**

None

### **Technical Approach Changes This Period**

None

### **IAG Milestone Accomplishments**

Submitted Proposed Plan for Reconfiguration  
of the IA OUs

04 Nov 94

### **Future IAG Milestones Through FY 95**

This information is listed in the IA OUs.

### **May Work Activity Status**

DOE issued a formal Stop Work Order on March 7, 1995. An Implementation Plan is being developed and DOE received this plan in May 1995. The plan outlines a course of action to bring the IA OU activities to a logical closure point. All activities that are related to the completion of the IAG milestones have been included in the Stop Work Order. Field activities and "time dependent" (seasonal) sampling activities have been exempt from the Stop Work Order; however, the TMs to summarize the activities are not exempt.

The Proposed Plan for Reconfiguration of the IA OUs was submitted to the regulatory agencies on November 4, 1994. To date, no written comments have been received on the Proposed Plan.

The in-depth formal review of all the information submitted by the Site Environmental Evaluation subcontractor for the IA was submitted for review and was completed in April 1995. The conclusion of the review was that given the qualitative nature of the Environmental Evaluation, the collected data are adequate. However, under the ecotoxicological work, some verification sampling is recommended.

On May 2, 1995, the second sampling event for the Surface Water and Sediment was completed. This task is exempt from the Stop Work Order.

### **IA OUs Quality Assurance**

A Self-Evaluation Program Plan and Checklist for May 1995 was developed.

## Technical Memoranda

### Project

### Integrated Industrial Area Operable Units

TM #1

TM Title

TM Status

IA Surface Water and Sediment Sampling Plan

Projected date of submittal to EPA/CDPHE: 12 Jan 95

Actual date of submittal: 05 Jan 95

Date CDPHE comments were received: 15 Jan 95

Date CDPHE approval was received: 05 Mar 95

### Planned Work for June

- Because of the Stop Work Order issued in March 1995, activities for the IA OUs will be brought to a logical closure point by means of the Implementation Plan that was submitted in May 1995.

### Problems

The Stop Work Order issued in March 1995 will delay intrusive field activities planned for the fourth quarter FY95 and all subsequent activities.

### Open Items

Comments on the Proposed Plan for Reconfiguration of the IA OUs are still pending.

The new agreement with the regulatory agencies needs to be negotiated to establish new milestone dates for the IA OUs.

## 2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affect areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

None

### Technical Approach

#### Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 8. The technical scope for OU 8 remains the same.

Accelerated removal of the sodium hydroxide tank and two steam condensate tanks that are located within IHSS 139.1 (N) was halted because of the May 1995 budget recision. These removals were being performed as part of the Decommissioning and Decontamination Pilot Project #4. Funding to this project was eliminated as part of the budget recision.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

01 May 92  
01 Dec 92

### Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Stop Work Order	04 Nov 97
Submit Final Phase I RFI/RI Report	12 Jul 94	Stop Work Order	10 Feb 98

### May Work Activity Status

Data analysis and preparation of the Stage 2 Nonintrusive Field Investigation Summary Report are ongoing. This effort is focusing on documenting the field activities and the results of the onsite generated data (e. g., NaI radiation surveys, High Purity Germanium radiation surveys, and soil gas analyses). Approximately 80 percent of the results from the laboratory analyses has been received. The most significantly delayed analyses were entered in the Rocky Flats Environmental Database System. Inquiry will be made with the

Building 123 laboratory to find out the status of these analyses. Very little of the data have been validated to date. Receipt of all the validated data are not expected for several months. Sections of the Summary Report are being compiled as the data become available. In accordance with the Stop Work Order, data evaluation and development of recommendations are not being performed.

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#### IA IM/IRA Interim Remedial Action Plan

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The needs analysis and programming scenario development have begun for the Decision Support System. Scenario development has occurred for all media.

On May 1, 1995, groundwater well installation began with preliminary field activities and a walk through prior to well location staking. On June 15, 1995, actual installation will start.

Surface water stations were installed and are collecting data. These data will be used in part to develop programming scenarios for the Decision Support System. Currently, operating stations are part of the National Pollution Discharge Elimination System upgrade and the 889 Decommissioning and Decontamination pilot project.

Prior to being placed in service, air samplers were installed and are awaiting calibration.

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#### Technical Memoranda

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##### Project

OU 8 - 700 Area

##### TM #1

##### TM Title

Investigation of Foundation Drains and Other Data Compilation  
Addendum to the OU 8 Work Plan, Draft Final

##### TM Status

Projected date of submittal to EPA/CDPHE: 01 Dec 94

Actual date of submittal: 23 Nov 94

Date when EPA/CDPHE comments received: To be determined

##### TM #2

##### TM Title

Results of Nonintrusive Field Investigations and Intrusive Work Plans  
(Actual Title has not been finalized)

##### TM Status

Projected date of submittal to EPA/CDPHE: To be determined

Actual date of submittal: To be determined

Date when EPA/CDPHE comments received: To be determined

#### Planned Work for June

- Once the Stop Work Order is lifted, TM #1 will be completed.
- Preparation of a Data Summary Report will continue without data interpretation or analysis.
- Once the Stop Work Order is lifted, work on TM #2 will resume.
- Actual installation of groundwater wells will begin.

**Problems**

If the IA Stop Work Order is not resolved, there is a potential to significantly disrupt the flow of work and the progress of the project. If field crews are lost to other projects while the Stop Work Order is in effect, much greater than day-for-day schedule and cost impacts are possible.

**Open Items**

None



Submit IM/IRA Responsiveness Summary	08 Feb 96	Stop Work Order	To be determined*
Submit Final Phase I IM/IRA Decision Document and Responsiveness Summary	07 May 96	Stop Work Order	To be determined*
Submit Corrective Design/Remedial Design Work Plan	07 Jun 96	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

#### May Work Activity Status

On May 11, 1995, tank sampling and inspection activities were completed. On May 18, 1995, borehole drilling and soil and groundwater sampling were completed. Some initial analytical results were received.

Under the terms of the Stop Work Order issued in March 1995, work on sampling and analysis continues, but data evaluation and development of recommendations are not being performed.

As part of the OU 9 tank investigation, the high purity germanium survey has been delayed because of the reprioritization of the high purity germanium survey crew time, problems with obtaining a collimator, and, more recently, problems with the weather. The high purity germanium survey and the follow-on sodium iodide survey were canceled because start up would be after the March 7, 1995, Stop Work Order, and also because the subcontracted sodium iodide survey would have to be performed after field crews were demobilized.

The Draft-Final-TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, has been under review by the regulatory agencies since November 1994. DOE received a plan for rescoping the OU 9 TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, in February 1995. Further work on rescoping the pipeline investigation has been suspended because of the Stop Work Order.

Intrusive and nonintrusive sampling activities on the OU 9 Outside Original Process Waste Tanks continued. Tank inspection and sampling, borehole and surficial soil sampling, and groundwater sampling are included in these sampling activities.

Comments from the regulatory agencies on the addendum to OU 9 TM #1, *Volume I, Part A, Field Sampling Plan- Outside Tanks*, to address Tanks T-8, T-9, T-11, T-24, T-30, and T-32 have not been received. However, the addendum has been finalized, and field work has been completed on these tanks.

#### Technical Memoranda

##### Project

OU 9 - Original Process Waste Lines

##### TM #1

##### TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

**TM Status**

When preparation was concluded: Jan 94  
Projected date of submittal to EPA/CDPHE: Mar 94  
Actual date of submittal: 15 Mar 94  
Date EPA/CDPHE comments received: 11 Apr 94

**TM #1**

**TM Title**

**TM Status**

*Field Sampling Plan - Volume II, Part A, Outside Pipelines*

When preparation was concluded: Aug 94  
Projected date of submittal to EPA/CDPHE: Nov 94  
Actual date of submittal: Nov 94  
Date EPA/CDPHE comments received: To be determined

**Planned Work for June**

- Work on completing soil boring logs, records transmittal, and field demobilization will continue. Work will continue on data summarization as the analytical results are received.

**Problems**

The tolling agreement, which addressed missed IAG milestones, expired January 31, 1995. The Rocky Flats Clean Up Agreement has not been signed so these original milestones could be reinforced once the Stop Work Order is lifted, and additional fines and penalties could be incurred.

**Open Items**

Comments are due from the regulatory agencies on the Draft TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*. However, based on verbal comments from the regulatory agencies, rescoping of the document is needed. Rescoping will be resumed after the Stop Work Order has been lifted.

## 2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work Changes This Period

None

### Technical Approach Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 10. The technical scope for OU 10 remains the same.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

27 Nov 91  
01 May 92

### Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	30 Jan 95	Stop Work Order	To be determined*
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Stop Work Order	To be determined*
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	Stop Work Order	To be determined*
Submit Final Phase II RFI/RI Work Plan	21 Nov 95	Stop Work Order	To be determined*
Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	Stop Work Order	To be determined*
Submit IM/IRA Responsiveness Summary	06 Mar 96	Stop Work Order	To be determined*
Submit Final Phase I IM/IRA Decision Document	04 Jun 96	Stop Work Order	To be determined*
Corrective Design/Remedial Design Work Plan	05 Jul 96	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

### May Work Activity Status

Under the terms of the Stop Work Order issued in March 1995, work on sampling and analysis continues, but data evaluation and development of recommendations are not being performed. The

Stop Work Order will be in effect until the DOE can negotiate the Rocky Flats Cleanup Agreement, which will contain new milestones for the IA OUs. Integral to the negotiation of this agreement is the approval of the IA OU Reconfiguration Plan, which was submitted to the regulatory agencies in November 1994.

The Draft TM #1 comments were scheduled to be received from the regulatory agencies in February 1995 but have not been received to date. The schedule for the delivery of the OU 10 Final Phase I Nonintrusive TM #1 is in jeopardy of being significantly delayed from the preliminary schedule developed in June 1994. Further delays in receipt of comments will result in a day-for-day slippage of the Final document delivery schedule.

Due to the current funding recision, the Building 443 tank removal and the Building 964 yard material decontamination have been delayed until additional funding can be identified.

#### Technical Memoranda

##### Project

##### OU 10 - Other Outside Closures

##### TM #1

##### TM Title

##### TM Status

##### Draft Final Phase I Nonintrusive TM #1

When preparation was concluded: 17 Jan 95

Projected date of submittal to EPA/CDPHE: 17 Jan 95

Actual date of submittal: 17 Jan 95

Date comments were received from the EPA/CDPHE: To be determined

##### TM #1

##### TM Title

##### TM Status

##### Final Phase I Nonintrusive TM #1

When preparation was concluded: To be determined

Projected date of submittal to EPA/CDPHE: 06 Apr 95

Actual date of submittal: To be determined

Date comments were received from the EPA/CDPHE: To be determined

#### Planned Work for June

- No work is planned for June 1995, unless the Stop Work Order is lifted.

#### Problems

If the IA Stop Work Order is not resolved, it has the potential to significantly disrupt the flow of work and the progress of the project. If field crews are lost to other projects while the Stop Work Order is in effect, much greater than day-for-day schedule and cost impacts are possible.

Comments from the regulatory agencies for Draft TM #1 have not been received.

## Open Items

The Draft TM #1 comments were scheduled to be received from the regulatory agencies in February 1995 but have not been received to date.

## 2.11 QU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

### Scope of Work

Changes This Period      None

### Technical Approach

Changes this Period      None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan Submit Draft Phases (combined) RFI/RI Report Submit Draft Proposed Plan	08 Jun 90 02 Jan 92 28 Apr 95 10 May 95
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### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		Deleted
Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95		Proposed elimination
Submit Final Phase II RFI/RI Work Plan	24 Jan 96	24 Jan 96	Proposed elimination
Submit Final Phase I Proposed IM/IRA Decision Document	14 Mar 96	14 Mar 96	Proposed elimination
Submit Phase I IM/IRA Responsiveness Summary	22 Jul 96	22 Jul 96	Proposed elimination

\* Revised according to the Process Improvement Proposal.

### May Work Activity Status

On May 10, 1995, the Draft Proposed Plan to the regulatory agencies was submitted. The original IAG milestone date for this submittal was October 9, 1998.

## Technical Memoranda

### Project

OU 11 - West Spray Field

#### TM

##### TM Title

Revised Field Sampling Plan and Data Quality Objectives

##### TM Status

Submitted to EPA/CDPHE: 31 Mar 94

TM approved

#### TM #1

##### TM Title

Exposure Scenarios

##### TM Status

When preparation was concluded: Mar 94 (late)

Projected date of submittal to EPA/CDPHE: 14 Dec 94

Actual date of submittal: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

#### TM #2

##### TM Title

Modeling

##### TM Status

When preparation was concluded: 22 Mar 94 (late)

Projected date of submittal to EPA/CDPHE: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

#### TM #3

##### TM Title

Contaminants of Concern

##### TM Status

When preparation is concluded or estimated to be concluded:  
10 Oct 94

Projected date of submittal to EPA/CDPHE: 09 Nov 94

Actual date of submittal: To be determined

Date EPA/CDPHE comments received: To be determined

#### TM #4

##### TM Title

Toxicity

##### TM Status

When preparation is concluded or estimated to be concluded:  
10 Oct 94

Projected date of submittal to EPA/CDPHE: 12 Dec 94

Actual date of submittal: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

### Planned Work for June

- The Final RFI/RI Report to the regulatory agencies will be completed and delivered.
- The Final Proposed Plan will be completed.

### Problems

None

### Open Items

None

## 2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1 and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of the development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work Changes This Period

None

### Technical Approach Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 12. The technical scope for OU 12 remains the same.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan

08 May 92

Submit Final Phase I RFI/RI Work Plan

05 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	15 Sep 94	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

### May Work Activity Status

A Stop Work Order was issued in March 1995. The Stop Work Order is and will continue to delay current schedules. Many events and milestones will remain unrecoverable.



## Technical Memoranda

### Project

OU 12 - 400/800 Area

TM #2

TM Title

TM Status

Summary of Nonintrusive Field Investigations

Projected date of submittal to EPA/CDPHE: Delayed because of the Stop Work Order. A new deliverable date will be determined.

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

### Planned Work for June

- If the Stop Work Order is lifted, DOE and the Rocky Flats Environmental Technology Site review of the OU 12 Preliminary Draft Nonintrusive Summary TM will continue.
- Due to the Stop Work Order issued in March 1995, activities for the IA OUs will be brought to a logical closure point by means of the Implementation Plan that was submitted in May 1995.

### Problems

Stop Work Order issued in March 1995 will delay characterization activities, other events, and milestones.

### Open Items

The new agreement with the regulatory agencies needs to be negotiated to establish new milestone dates for the IA OUs.

### 2.13 OU 13 - 100 AREA

Cleanup of the 100 Area comprises the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2, and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); the Hydrogen Peroxide Spill (IHSS 191); and the Scrap-Metal Site (IHSS 197).

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

#### **Scope of Work**

##### **Changes This Period**

This OU is under a Stop Work Order. No further characterization will be pursued; however, preparation of a Data Summary for nonintrusive investigations will proceed.

#### **Technical Approach**

##### **Changes This Period**

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 13. The technical scope for OU 13 remains the same.

#### **IAG Milestone Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/RI Work Plan	12 Oct 92

#### **Future IAG Milestones Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	11 Jan 95	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

**May Work Activity Status**

An area of contamination that was identified in IHSS 128 remains uninvestigated because of the Stop Work Order. Only items in the IA OUs Stop Work Order Implementation Plan are proceeding.

Surficial soils data validation is complete.

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Work on a Field Data Summary, Results of Nonintrusive Field Investigations, continues.

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**Technical Memoranda****Project**

OU 13 - 100 Area

**TM #1****TM Title****TM Status**

Addendum to Field Sampling Plan

When preparation was concluded: Feb 94

Projected date of submittal to EPA/CDPHE: Feb 94

Actual date of submittal: 03 Mar 94

Date EPA/CDPHE comments were received: 16 May 94

**TM #2****TM Title****TM Status**

Results of the Nonintrusive Field Investigations

Projected date of submittal to EPA/CDPHE: 07 Feb 96

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

**Planned Work for June**

- Data summary preparation will continue.

**Problems**

None

**Open Items**

The new agreement with the regulatory agencies needs to be negotiated to establish new milestone dates for the IA OUs.

## 2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area, loading dock north of Building 776 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSS 156.1); Building 444 Parking Lot (IHSS 160); southwest of Building 664 (IHSS 161); Radioactive Site along 8th Avenue (IHSS 162); Radioactive Sites - 800 Area that includes the concrete slab north of Building 850, and Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed is preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by the EPA and the CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

None

### Technical Approach

#### Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 14. The technical scope for OU 14 remains the same.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan

26 Jun 92

Submit Final Phase I RFI/RI Work Plan

19 Oct 92

### Future IAG Milestones

#### Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	23 May 95	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

### May Work Activity Status

The review comments have been incorporated into the controlled procedure for the Pushed Surface Soil Sampler, and the procedure completed the validation and verification process.

The TM for the Stage I (nonintrusive field investigation) has been delayed because of the Stop Work Order for the IA OUs. A Data Summary Report for OU 14 is being prepared for the completed Stage I Field Investigation. The Data Summary does not include data interpretation, recommendations, or conclusions. The Data Summary will provide a process for the preservation of the data collected during Stage I of the field investigation. Data will be preserved in the Data Summary through the use of tables, maps, description of field activities, data evaluation methods, etc.

An Estimate at Completion was prepared that incorporated the Stop Work Order.

## Technical Memoranda

### Project

OU 14 - Radioactive Sites

### TM #1

### TM Title

Results of Nonintrusive Field Investigations

### TM Status

Projected date of submittal to EPA/CDPHE: 29 Jan 96

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

### Planned Work for June

- The preparation of the OU 14 Data Summary for the nonintrusive field work will be reviewed and work will continue.
- If the Stop Work Order is lifted, the preparation of the OU 14 TM #1 will restart.
- The final approval for the Push Subsurface Soil Sample controlled procedure will be obtained.

### Problems

None

### Open Items

None

## 2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is comprised of the following six IHSSs:

IHSS 178, Building 881 - Drum Storage Area

IHSS 179, Building 865 - Drum Storage Area

IHSS 180, Building 883 - Drum Storage Area

IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster

IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area

IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included in the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA FO.01 and FO.02 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. Characterization is complete. Results show no contamination present and no evidence of release of contaminants.

### Scope of Work

Changes This Period None

### Technical Approach

Changes This Period

In an agreement between the regulatory agencies and DOE, the Final Proposed Plan and Draft RCRA Permit Modification remedy is as follows:

- All six OU 15 IHSSs will be clean closed according to RCRA.
- IHSSs 178, 211, and 217 will be No Action.
- IHSSs 204, 179, and 180, as part of the respective buildings and not as IHSSs, will be deferred until final building disposition.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92
Submit Draft Phase I RFI/RI Report	25 Jul 94
Submit Final Phase I RFI/RI Report	16 Dec 94

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Corrective Action Decision/ Record of Decision (Proposed)			30 Sep 95

**May Work Activity Status**

On May 17, 1995, the Proposed Plan/Draft RCRA Permit modification was submitted and the public comment period began.

**Technical Memoranda**ProjectOU 15 - Inside Building Closures**TM #1****TM Title****TM Status****Field Sampling Plan**

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA; 07 Apr 94, CDPHE)

**TM #2****TM Title****TM Status****Human Health and Risk Assessment**

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA; 07 Apr 94, CDPHE)

**Planned Work for June**

- On June 21, 1995, a public meeting is planned with the regulatory agencies.
- The Draft Corrective Action Decision/Record of Decision will be revised to incorporate comments and will be submitted to the regulatory agencies for review.

**Problems**

None

**Open Items**

None

## 2.16 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that comprise a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the general Rocky Flats Environmental Technology Site ER activities. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

### Scope of Work

Changes This Period

None

### Technical Approach

Changes This Period

None

### IAG Milestone Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Annual Treatability Study Report	04 Mar 94
Submit Draft IA IM/IRA Decision Document	23 Mar 94
Submit Draft IA IM/IRA Responsiveness Summary	28 Oct 94
Submit Final IA IM/IRA Decision Document	21 Nov 94
Submit Final Annual Treatability Study Report	10 Mar 95



Future Milestones  
Through FY 96

None

May Work Activity Status

Sitewide Activities

Sitewide Treatability Studies

Removal of Actinides from Soil - DOE received the Final Removal of Actinides from the Soil Report as scheduled on April 17, 1995.

Bench-Scale Agitated Leaching Studies - During May 1995, the Los Alamos National Laboratory personnel downloaded analytical data into a data analysis program. Compilation of the final report was started co-currently with the analysis of data.

Because of funding cuts, the subcontract with the Los Alamos National Laboratory for this project has been canceled. Management plans are to perform the remaining work in-house.

Annual Treatability Study Report - The Final Annual Treatability Study Report has been completed and was delivered ahead of schedule to the regulatory agencies on March 13, 1995.

CURE SITE Demonstration - During May 1995, the following items or issues were covered:

1. A Readiness Assessment checklist was distributed for review. Following minor changes, the document will be submitted for approval.
2. DOE completed the National Environmental Policy Act review. DOE signature is pending.
3. The Final Draft Demonstration Plan was distributed for review.
4. The draft Integrated Work Control Plan is scheduled for completion by June 2, 1995.
5. The Project Management Plan was distributed for review and comment.
6. All training for offsite personnel has been completed.
7. Appointments for lung-counts have been set up for Rocky Flats Environmental Technology Site personnel.
8. Respirator fits for subcontractor personnel were completed as of May 31, 1995.
9. DOE received conditional approval from EPA for the demonstration. The two issues that were identified as deficiencies were: lack of a test matrix that specifies operating parameters for each of the test runs and no reference to specific waste management procedures for generated waste. These items will be resolved shortly and have no negative schedule impacts.

Planned Work for June

Sitewide Activities

- Sitewide Treatability Studies will continue normal activities.

Problems

None

Open Items

None

### SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy, and, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

#### 3.1 SURFACE WATER AND SEDIMENTS

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

Contract Laboratory Program Target Compound List Volatile Organic Analysis  
Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List  
Field Parameters  
Specific Conductivity  
Dissolved Oxygen  
Major Anions  
Radionuclides  
Temperature  
Total Dissolved Solids/Total Suspended Solids  
pH  
Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program-Semi Volatile Organic Analysis and Contract Laboratory Program-Pesticides/polychlorinated biphenyls Herbicides-619.

#### 3.2 SOILS

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

#### 3.3 GROUNDWATER

During the month of May 1995, 108 wells were sampled, and 12 weekly water level measurements were ongoing. Of the 108 wells sampled, 10 were semiannual wells and 98 were quarterly wells. Thirty-three of the wells were identified as RCRA compliance wells and 232 were identified as Protection Area wells.

For the second quarter 1995, 296 wells are planned to be sampled. The actual April 1995 and May 1995 sampling of 195 wells is ahead of schedule for the planned 175 wells and constitutes 66 percent of the total sampling effort for the quarter.

Groundwater samples are routinely sampled for the following:

Radiochemical Parameters

Gross Alpha

Gross Beta

Plutonium

Americium

Strontium

Tritium

Uranium

Cesium

Inorganic Parameters

Nitrate/Nitrite

Phosphorous

Ammonia

Total-Dissolved-Solids

Chlorine

Fluorine

Sulfate

Carbonate

Bicarbonate

Total Suspended Solids

Dissolved CLP<sup>1</sup> and additional metals

Cyanide

CLP<sup>1</sup> Volatile Organic Constituents

Field Parameters

Specific Conductivity

Temperature

Turbidity

pH

*CLP = Contract Laboratory Program*

#### SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats Environmental Technology Site ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-</u> <u>Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc., (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Feb 92
2	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock) surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor Extraction	1993
3	Assessment	CH2M Hill		RI Report	Apr 92
4	Remediation	Halliburton	Halliburton	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-Closure Monitoring Plan	Nov 93
4	Remediation	Halliburton		Develop Treatability Study for Pondcrete	Aug 94

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
4	Remediation	Halliburton		Develop Treatability Study and Conceptual Design for Pond Sludge Processing	Aug 94
5	Assessment	ASI	Dames & Moore Blackhawk Geo Walsh & Assoc. Adv. Terra Testing	Implementation of OU 5 Work Plan through completion of the RFI/RI(excluding Environmental Evaluation)	Jun 92
5	Assessment	S. M. Stoller		Implementation of the OU 5 RFI/RI Environmental Evaluation	Sep 92
5	Assessment	Metcalf & Eddy	Rust	Implementation of the FS	Sep 94
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of the Environmental Evaluation Section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G. S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Admin. Record	Oct 90
SW	Geo. Char.	Jacobs Eng		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats	Nov 91
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters-level training program in Engineering Science and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	Apr 92
SW	Geo. Char.	University of Soil Colorado		Monitoring Vadose Zone	Jun 92

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde Water	SAIC/Wright		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
SW	QA	Support	SAIC	Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S. M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide Quality Assurance /Quality Control support to ER Program	Nov 92



## ACRONYMS

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
M	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RCRA	Resource Conservation and Recovery Act
RFFO	Rocky Flats Field Office
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
TM	Technical Memorandum